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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

SHERMAN, STEPHEN G

ART UNIT PAPER NUMBER

2629

DATE MAILED: 04/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/659,217	O'KEEFFE ET AL.	
	Examiner	Art Unit	
	Stephen G. Sherman	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is in response to the amendment filed the 16 March 2006.

Claims 1-4 and 6-23 are pending. Claim 5 has been cancelled.

Response to Arguments

2. Applicant's arguments with respect to claims 1, 11 and 18 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

3. Claim 20 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Due to the amendment of claim 18, the subject matter presented in claim 20 has already been presented in the independent claim.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 1-4, 6-8 and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu (US 2002/0135562).

Regarding claim 1, Wu discloses an input device comprising:

a housing (Figures 2A and 2B) having:

a bottom case (Figure 2B. The housing can be seen to have a bottom case attached to the upper section 22); and

an upper member disposed above the bottom case (Figure 2B. The upper section 21/22 is disposed above the bottom case.),

the upper member including a palm rest configured to support a user's palm (Figures 2A and 2B, item 22 and paragraph [0024])

left and right key plates extending continuously from the palm rest to form a hinge recess disposed in a bottom surface of the upper member and between the key plate and the palm rest without a gap (Figure 3 shows that the key plates 31 and 32 extend continuously from the palm rest 33 with the hinge recess 35 is located between the key plates and the palm rest without causing a gap.),

the left and right key plates being movable in bending relative to the palm rest at the hinge recess to activate the corresponding key switch (Paragraph [0026] explains that the recess 34 shown in Figure 3 is developed to allow the independent depression of the individual key plates 31 and 32 by bending at the recess 35.),

the hinge recess being angled forward and outward to the left from a central region of the upper member (Figure 3 shows that the hinge recess 35 is angled outward and forward to the left from the central hinge 34.), and

the hinge recess being angled forward and outward to the right from the central location of the upper member (Figure 3 shows that the hinge recess 35 is angled outward and forward to the right from the central hinge 34.).

Wu fails to explicitly show in this embodiment that there are two separate recesses, one being a right and one being a left, for the right and left key plates 31 and 32 shown in Figure 3.

Wu does show in a separate embodiment shown in Figure 4 that there is an opening 40 with the scroll button 45 such that the hinge recess would be separated into

two different hinge recesses, one being for the left button and one being for the right button.

Therefore it would have been obvious to “one of ordinary skill” in the art at the time the invention was made to combine the idea of having a middle section with a scroll button 45 as taught in the embodiment shown in Figure 4 of Wu with the mouse configuration of the embodiment shown in Figure 3 of Wu such that there would be a middle section separating the hinge recess into two hinge recesses in order to provide extra functionality of the mouse by providing a scroll button to allow for scrolling the screen up/down, zooming in/out, or any other defined functions.

Regarding claim 2, Wu discloses the input device of claim 1 wherein the hinge comprises a hinge recess which is smaller in thickness than the palm rest (Figure 2B and paragraph [0025]. It can be seen from Figure 2B that the recess 23 is smaller in thickness than the palm rest 22.).

Regarding claim 3, Wu discloses the input device of claim 2 wherein the hinge recess is smaller in thickness than the at least one key plate (Figure 2B and paragraph [0025]. It can be seen from Figure 2B that the recess 23 is smaller in thickness than the key plate 21.).

Regarding claim 4, Wu discloses the input device of claim 3 wherein the hinge recess decreases in thickness gradually from the palm rest and from the at least one

key plate, reaching a minimum thickness at an intermediate location between the palm rest and at least one key plate (Figure 2B and paragraph [0025]. It can be seen from Figure 2B that the recess 23 reaches a minimum thickness at an intermediate location between the palm rest 22 and the key plate 21.).

Regarding claim 6, Wu discloses the input device of claim 1.

Wu also discloses in Figure 4 further comprising an island disposed in the spacing and connected between the left key plate and the right key plate (Item 40 is located in the spacing between the two key plates 41 and 42 as described in paragraph [0027].).

Regarding claim 7, Wu discloses the input device of claim 6.

Wu also discloses wherein the island includes at least one opening through which at least one user-manipulable object protrudes from an interior of the housing to be operable by a user's finger (Figure 4 the island located between key plates 41 and 42 can be seen to have a scroll button 45 as described in paragraph [0027].).

Regarding claim 8, Wu discloses the input device of claim 7.

Wu also discloses wherein the at least one user-manipulable object comprises of a roller (Paragraph [0027]).

Regarding claim 21, Wu discloses the input device of claim 6.

Wu also discloses wherein the island includes a left side adjacent to the left key plate and a right side adjacent to the right key plate (Figure 4 shows that the opening 40 had a left and right edge which is adjacent to the key plates 41 and 41.).

Wu fails to teach that the left side includes at least one left tab that extends over a top of the left key plate and that the right side includes at least one right tab that extend over a top of the right key plate.

However, since Wu discloses that the purpose of his invention is to provide for no gaps in the mouse device and that various modifications could be made to the mouse, it would have been obvious to "one of ordinary skill" in the art at the time the invention was made that part of the opening 40 of Wu would extend on both of the right and left sides over the key plates creating a "tab" like extension in order to keep the key plates in place, as is commonly done when items are to be kept in one place.

Regarding claim 22, Wu discloses the input device of claim 21, wherein the tabs are configured to inhibit the key plates from extending above the tabs (The examiner interprets that if the tabs extend over the key plates as in claim 21 that the key plates would be inhibited from extending over the tabs.).

Regarding claim 23, Wu discloses the input device of claim 21, wherein the tabs are configured to inhibit the key plates from extending above the tabs in the input device is dropped (The examiner interprets that if the tabs extend over the key plates as in claim 21 that the key plates would be inhibited from extending over the tabs.).

7. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wu (2002/0135562) in view of Su (US 2003/0001819).

Regarding claim 9, Wu discloses the input device of claim 1.

Wu fails to teach wherein the upper member is coupled to a top case which is connected to the bottom case, the upper member including beveled edges to substantially conceal gaps between the upper member and the top case.

Su discloses that in the seamless mouse that there is no need for a clearance between the conventional push key and the top cover (Paragraph [0011].).

Therefore it would have been obvious to “one of ordinary skill” in the art at the time the invention was made to conceal gaps as taught by Su to provide a seamless mouse as taught by Wu in order to provide a mouse where the radial push key can have better control and operation performance.

8. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wu (2002/0135562) in view of Nakamura et al. (US 6,801,967).

Regarding claim 10, Wu discloses the input device of claim 1.

Wu fails to teach wherein the bottom case includes an alignment groove configured to be aligned with an alignment protrusion of a recharging member.

Nakamura et al. disclose an input device wherein the bottom case includes an alignment groove configured to be aligned with an alignment protrusion of a recharging member (Figures 2B and 5A-B and column 4, lines 25-27 explain that the alignment grooves 37 and 38 align with the recharging protrusions 94 and 95.).

Therefore it would have been obvious to "one of ordinary skill" in the art at the time the invention was made to combine the rechargeable mouse taught by Nakamura et al. with the mouse taught by Wu in order to provide a seamless mouse in which the battery can be easily recharged without having the configuration bulky, hard to use and expensive.

9. Claims 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Su (US 2003/0001819) in view of Nakamura et al. (US 6,801,967).

Regarding claim 11, Su discloses an input device comprising:

a housing (Figure 1, item 100) having:

a bottom case (Figure 1, item 10 and paragraph [0010]) ;

a top case connected to the bottom case (Figure 1, there is a top case located between the bottom case 10 and the upper section 20.),

the top case including a left side grip and a right side grip being formed on a single piece component (Figure 1, there is a side grip on both sides located between the bottom case 10 and the upper section 20 which are formed on the single piece component.),

the left side grip and the right side grip being configured to be held by a user's thumb on one side and by at least one of the user's ring finger and little finger on another side (Figure 1, the grips on both sides would be held by the user's ring finger and little finger as is done on any conventional mouse.);

and an upper member connected to the top case and including a palm rest configured to support the user's palm (Figure 1 and paragraph [0010]. Item 20 is an upper member which includes a palm rest to support a user's palm.).

Su fails to teach wherein the bottom case includes an alignment groove configured to align with an alignment protrusion of a charging base configured to receive the input device for charging the input device.

Nakamura et al. disclose an input device wherein the bottom case includes an alignment groove configured to be aligned with an alignment protrusion of a recharging member (Figures 2B and 5A-B and column 4, lines 25-27 explain that the alignment grooves 37 and 38 align with the recharging protrusions 94 and 95 of the recharging base 15.).

Therefore it would have been obvious to "one of ordinary skill" in the art at the time the invention was made to combine the rechargeable mouse taught by Nakamura et al. with the mouse taught by Su in order to provide a seamless mouse in which the battery can be easily recharged without having the configuration bulky, hard to use and expensive.

Regarding claim 12, Su and Nakamura et al. disclose the input device of claim 11.

Su also discloses wherein the single piece component includes a front connected between the left side grip and the right side grip (In Figure 1, there is a front section connected between the left and right grip between push sections 24 and base 10 on the single piece component.).

Regarding claim 13, Su and Nakamura et al. disclose the input device of claim 11.

Su also discloses wherein at least one of the left side grip and the right side grip has a concave surface (Figure 1, it can be seen from the curve in the structure that the section of the grip is formed as a concave surface.).

Regarding claim 14, Su and Nakamura et al. disclose the input device of claim 11.

Su also discloses wherein a portion of the single piece component has a hollow interior (Figure 2. The examiner interprets that since the connections and the switches are located inside of the housing that at least a portion of the single piece component would be hollow.).

Regarding claim 15, Su and Nakamura et al. disclose the input device of claim 14.

Su and Nakamura et al. fail to teach wherein the single piece component having the hollow interior is formed by gas assisted injection molding.

However, it would have been obvious to "one of ordinary skill" in the art at the time the invention was made to form the single piece component using gas assisted injection molding since it is well known that gas assisted injection molding results in material savings including reduction of cost and reduction of time, it also results in the quality improvement by removal of sink marks, reducing internal stresses and allows for greater freedom in the design of parts.

10. Claims 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Su (US 2003/0001819) in view of Nakamura et al. (US 6,801,967) and further in view of Wu (US 2002/0135562).

Regarding claim 16, Su and Nakamura et al. disclose the input device of claim 11.

Su and Nakamura et al. fail to teach wherein the single piece component has a thick portion which is thicker than a thin portion, and wherein the thin portion comprises a first material and wherein the thick portion comprises the first material and a second material.

Wu discloses an input device wherein the single piece component has a thick portion which is thicker than a thin portion (Figure 5B, section 52 is thicker than a section 54.), and wherein the thin portion comprises a first material (Figure 5B the thin

portion 54 can be seen to comprise a first material.) and wherein the thick portion comprises the first material and a second material (Figure 5B the thick portion 52 can be seen to comprise a first and second material.).

Therefore it would have been obvious to "one of ordinary skill" in the art at the time the invention was made to use the recess portion as taught by Wu to replace the coupling post 22 taught by Su in order to allow for the depression of the key plates and to simplify the manufacturing process and to allow for the assembling process of the housing to be omitted to accordingly reduce costs.

Regarding claim 17, Su, Nakamura et al. and Wu disclose the input device of claim 16.

Su, Nakamura et al. and Wu fail to teach of an input device wherein the single piece component having the thick portion and the thin portion is formed by dual material injection molding.

However, it would have been obvious to "one of ordinary skill" in the art at the time the invention was made to form the single piece component by using dual material injection molding since it is well known that dual material injection molding has high production rates and results in a minimum loss of materials.

11. Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Su (US 2003/0001819) in view of Wu (US 2002/0135562).

Regarding claim 18, Su discloses an input device comprising:

a housing (Figure 1, item 100) having:

a bottom case (Figure 1, item 10 and paragraph [0010]);

a top case connected to the bottom case (Figure 1, there is a top case located between the bottom case 10 and the upper section 20.),

the top case including a left side grip and a right side grip (Figure 1, there is a side grip on both sides located between the bottom case 10 and the upper section 20.),

the left side grip and the right side grip being configured to be held by a user's thumb on one side and by at least one of the user's ring finger and little finger on another side (Figure 1, the grips on both sides would be held by the user's ring finger and little finger as is done on any conventional mouse.);

and an upper member connected to the top case (Figure 1, item 20 and paragraph [0010].),

the upper member including a palm rest configured to support the user's palm (Figure 2 shows section 20 to rest a user's palm as explained in paragraph [0010].)

Su fails to teach of left and right key plates extending continuously from the palm rest to form a hinge recess disposed in a bottom surface of the upper member and between the key plate and the palm rest without a gap, the left and right key plates being movable in bending relative to the palm rest at the hinge recess to activate the corresponding key switch, the hinge recess being angled forward and outward to the left from a central region of the upper member, and the hinge recess being angled forward and outward to the right from the central location of the upper member.

Wu discloses of left and right key plates extending continuously from the palm rest to form a hinge recess disposed in a bottom surface of the upper member and between the key plate and the palm rest without a gap (Figure 3 shows that the key plates 31 and 32 extend continuously from the palm rest 33 with the hinge recess 35 is located between the key plates and the palm rest without causing a gap.),

the left and right key plates being movable in bending relative to the palm rest at the hinge recess to activate the corresponding key switch (Paragraph [0026] explains that the recess 34 shown in Figure 3 is developed to allow the independent depression of the individual key plates 31 and 32 by bending at the recess 35.),

the hinge recess being angled forward and outward to the left from a central region of the upper member (Figure 3 shows that the hinge recess 35 is angled outward and forward to the left from the central hinge 34.), and

the hinge recess being angled forward and outward to the right from the central location of the upper member (Figure 3 shows that the hinge recess 35 is angled outward and forward to the right from the central hinge 34.).

Therefore it would have been obvious to "one of ordinary skill" in the art at the time the invention was made to to use the recess portion as taught by Wu to replace the coupling post 22 taught by Su in order to allow for the depression of the key plates and to simplify the manufacturing process and to allow for the assembling process of the housing to be omitted to accordingly reduce costs.

Su and Wu fail to explicitly show in the embodiment taught by Wu that there are two separate recesses, one being a right and one being a left, for the right and left key plates 31 and 32 shown in Figure 3.

Wu does show in a separate embodiment shown in Figure 4 that there is an opening 40 with the scroll button 45 such that the hinge recess would be separated into two different hinge recesses, one being for the left button and one being for the right button.

Therefore it would have been obvious to "one of ordinary skill" in the art at the time the invention was made to combine the idea of having a middle section with a scroll button 45 as taught in the embodiment shown in Figure 4 of Wu with the mouse configuration taught by the combination of Su and Wu such that there would be a middle section separating the hinge recess into two hinge recesses in order to provide extra functionality of the mouse by providing a scroll button to allow for scrolling the screen up/down, zooming in/out, or any other defined functions.

Regarding claim 19, Su and Wu disclose the input device of claim 18.

Su also discloses wherein the left side grip and the right side grip of the top case are formed on a single piece component (Figure 1, there is a side grip on both sides located between the bottom case 10 and the upper section 20 which are formed on the single piece component.).

Regarding claim 20, please refer to the rejection of claim 18.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Giles et al. (US 6,323,843) disclose of a mouse in which the movement is facilitated by a recess created in the device.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen G. Sherman whose telephone number is (571) 272-2941. The examiner can normally be reached on M-F, 8:00 a.m. - 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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5 April 2006

AMR A. AWAD
PRIMARY EXAMINER

A handwritten signature in black ink, appearing to read "Amr A. Awad", with a large, sweeping flourish at the end.